# Littleton Adventist Hospital's Pharmaceutical Waste Program Hospital Perspective

CDPHE Waste Management Workshop for Healthcare Facilities

August 29, 2012

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- Program success factors
- Potential challenges
- Healthcare facility pharmaceutical program costs
- Conclusion
- Q & A

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# Littleton Adventist Hospital, Centura Health


- 231 licensed beds
- 175 staffed beds
- 1250 + associates
- Level II Trauma Center
- Level III NICU
- Specialize in cardiology, orthopedics, neurology, cancer care and women's and children's care
- Limited Lab and Pathology services
- Practice Greenhealth award winner
- Energy Star award winner
- CESQG

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# LAH Waste Program History

- **2005:** Vendor hired to dispose hazardous waste
- **2006:** RMW reduction efforts initiated
- **2008:** Implementation of reusable sharps containers
  Green Team formed
  Waste Matrix designed to track waste
- **2009:** Pharmaceutical waste segregation program established
- **2012:** Reusable suction container system installed
  Mercury Minimization policy adopted

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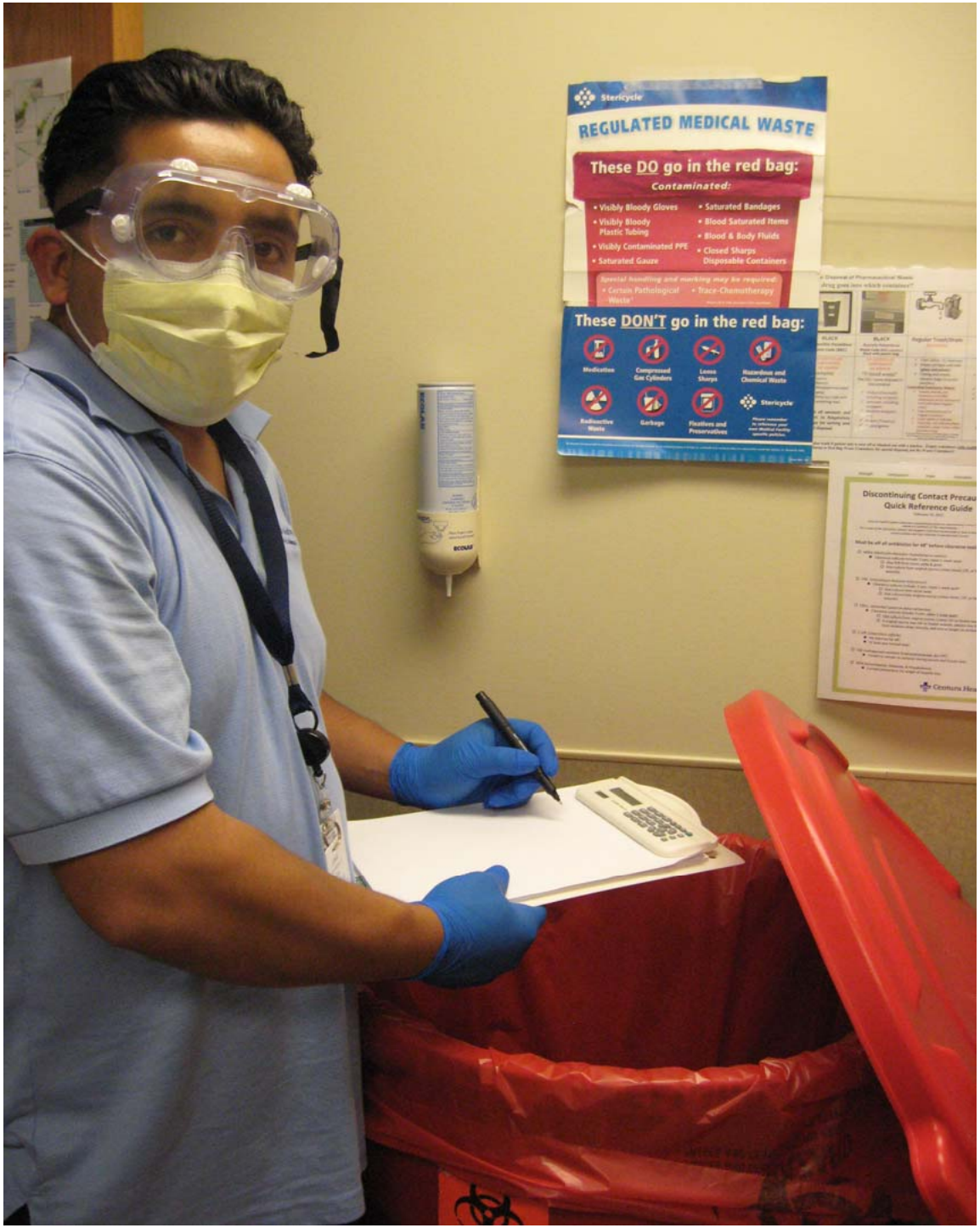



**From 2006 to 2012 LAH has been able to reduce 52% of the RMW volume per adjustedpatient days.**


Hazardous Waste
Satellite Accumulation
Area
Check for Leaks and Spills
Keep Closed
Add Accumulation Date on Container
When Full and Move to Storage Area
Hazardous Materials – Emergency Information
Proper Disposal of Pharmaceutical Waste
What drug goes into which container?
BLUE
(Non-Hazardous)
PURPLE
BLACK
BLACK
Regular Trash/Drain
Red Sharps
Loma Linda University Medical Center
PROJECT CURE
PHARMACEUTICAL
DUAL WASTE CONTAINER
(Sort Code P12)
KEEP LID CLOSED
DO NOT REMOVE OR DISPENSE ITEMS FROM THIS CONTAINER
NO CONTROLLED SUBSTANCES
NO FREE LIQUIDS
Coumadin,
Nicotine, Warfarin,
and Jantoven
+Wrappers
NO other waste permitted
HAZARDOUS
PHARMACEUTICAL WASTE
Sort Code BK1,BK88
Flammable/Toxic
KEEP LID CLOSED
DO NOT REMOVE OR DISPENSE ITEMS FROM THIS CONTAINER
NO SHARPS


Hazardous Waste
Satellite Accumulation
Area

# Success Factors (cont.)

Littleton Adventist Hospital
Weekly Rx Waste Container Inspection Log Sheet (CESQG) Area_____ Month_____
Year_____
Record any problems noted; document how they were corrected and the date of correction. Attach extra sheet if necessary.

| Week | Wk 1/Date: | Wk 2/Date: | Wk |
|---|---|---|---|
| Emergency Info Posted | | | |
| Labeled "Hazardous Waste" | | | |
| Accumulation Start Date Marked | | | |
| Satellite Containers Moved/Marked | | | |
| Start Date <180 Days Ago | | | |
| Good Condition/Not Leaking | | | |
| Kept Closed | | | |
| Stored to Prevent Rupture/Leakage | | | |
| Waste Compatible with Container: Blue (RCRA non-hazardous) | | | |
| Waste Compatible with Container: Purple (Dual) | | | |
| Waste Compatible with Container: Compatible Black (Flammable/Toxic) | | | |
| Acutely Hazardous P-Listed Waste (Black container) | | | |
| Waste Compatible with Container: Non-Compatible Black (i.e., Oxidizers, Aerosols) | | | |
| Sharps Containers—Check for any Rx Waste! | | | |
| Incompatible Wastes Separated | | | |
| Adequate Aisle Space | | | |
| <6000 kg Stored at One Time | | | |
| Your Initials | | | |

Comments/Follow-Up _____
_____
_____

Accumulation Start Date Marked
Satellite Containers Moved/Marked
Start Date <180 Days Ago
Good Condition/Not Leaking
Kept Closed
Stored to Prevent Rupture/Leakage
Waste Compatible with Container: Blue (RCRA non-hazardous)
Waste Compatible with Container: Purple (Dual)
**Waste Compatible with Container: Compatible Black** (Flammable/Toxic)
**Acutely Hazardous P-Listed Waste (Black container)**
Waste Compatible with Container: Non-Compatible Black (i.e., Oxidizers, Aerosols)
**Sharps Containers—Check for any Rx Waste!**
Incompatible Wastes Separated
Adequate Aisle Space
<

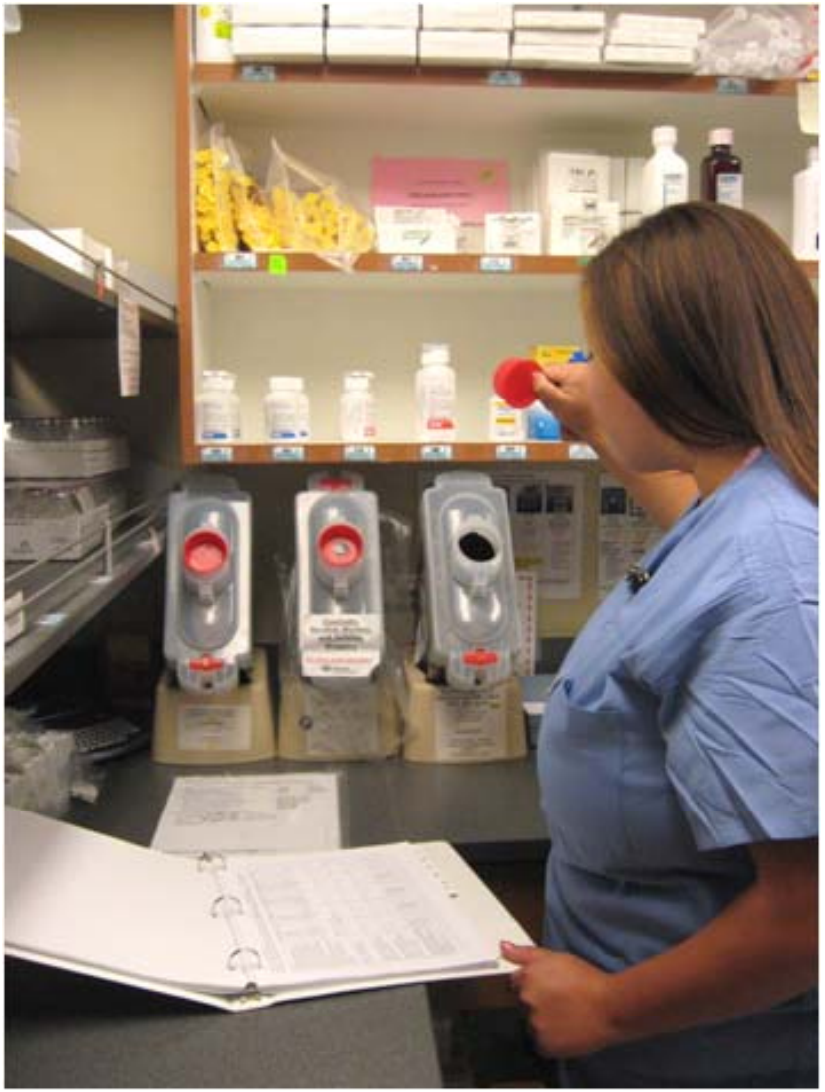
**Focused on un-training old practices and auditing all red sharps containers with the Rx waste containers**

Audit Form

# Monthly Feedback Form

| | Tab | **Area** | **Room** | **Jan 2010** | **Feb 2010** | **Mar 2010** |
|---|---|---|---|---|---|---|
| Ground Floor | 1. | Central Accumulation Area (Rick Boyer) | | Separate Documentation | Separate Documentation | Separate documentation |
| | 2. | Emergency Department | Fast Tracks | Scissors in blue bin. Rx waste in red sharps. | Test tube with blood in Rx Waste | Rx waste in sharps |
| | | | Soiled Utility: Medical Side | Rx waste in red sharps. | Partial syringe (not labeled) in red sharps | OK |
| | | | Med Room: Medical Side | Sharps in blue and black Rx waste. Blue waste in black. Partial Lidocaine in red sharps. | Partial syringes in black & red sharps. This is dual waste (purple) | Sharps and a blood tube on the floor, next to containers. |
| | | | Soiled Utility Room: Trauma Side | OK | OK | OK |
| | | | Med Room : Trauma Side | OK | Bio bag & broken bottles in black, Propofol & other blue waste in black, bottles of pills in red sharps | Bio Bag in Rx waste<br>Rx waste in sharps |
| | | | CT Room | Rx waste (partial syringes) in red sharps. | Unlabeled partial syringes in red sharps | OK |
| | | | ED Room #16 | Rx waste (partial syringes) in red sharps | Empty—container is not used | Sharps in the blue Rx waste bucket |
| | 3. | Children's After Hours | | OK | OK | Empty vials and bottles in Rx waste |
| 1st Floor | 4 | Medical Imaging | CT Room #1 | Partial Lidocaine bottles in Red sharps | OK | OK |
| | | | CT Room #2 | OK | Blue container open X2 | OK |
| | | | Nuclear Med Treadmill Room | OK | OK | OK |
| | | | MRI | OK | OK | Some trash in Rx (f/u - corrected) |


Nicotine Transdermal System
PATCH
14mg
STEP 2
Includes:
Behavior Support
Program with
self-help guide
14 PATCHES
Nicotine Transdermal System
PATCH
STOP SMOKING AID
STEP 3
7mg
Nicotine Transdermal System
PATCH
STEP 1
21mg
ROGLYCERIN
ALL EXPIRED/USED NICOTINE AND ITS PACKAGING MUST BE DISPOSED
PBKC BLACK CONTAINER
(LOCATED IN ORAL SUSPENSIONS AREA)
P
P



Trained and delegated departments to conduct their own weekly audits and report the results monthly to the Rx waste Coordinator (OR, MI, NICU, Pharmacy, Resp. Therapy, Castle Rock campus)

# Success Factors (cont.)

- Coordinated the Rx waste program implementation and audits with the rest of waste programs in the facility – almost every department was involved in this effort
- Established accountability and reporting structure to the Safety Committee, Nursing Leadership, Quality and the Board
- Trained several associates to sign RMW and hazardous waste manifests, which improved knowledge and familiarity

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# Success Factors (cont.)

Listened to concerns and made segregation as practical and safe as possible, especially in OR

# Success Factors (cont.)

- Studied the placement and use of the Rx waste containers throughout the facility and made changes to optimize the use
- Tied the Rx waste program with the sustainability culture in the facility, designed ***a waste stream matrix*** to educate staff about the types and volumes of wastes our hospital creates and emphasized the environmental responsibility we must adopt

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# Challenges we have encountered

## During implementation of the program

- Budgetary considerations; this program was an added expense
- Rx waste program was not in anyone's job description
- Identifying appropriate Rx waste containers for different areas
- Confusion regarding disposal of controlled substances (DEA)
- RCRA "empty" rule, dual waste, definition of a syringe
- HIPAA (patient information) issue in empty Rx containers and IVs
- Building of a Centralized Accumulation Area (CAA)

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# Challenges we have encountered

**Ongoing issues**

- Rx Formulary characterization changes
- P-listed waste segregation in separate containers, change after the initial training
- Keeping knowledge level current with staff turnover, travelers
- Different Rx waste segregation systems in different hospitals
- Embedding the Rx waste segregation compliance in the culture in ED and OR.

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# Rx waste program costs

**Choices impacting costs:**

1. Size of the healthcare facility and number/type of service lines
2. Local POTW regulations and restrictions on disposal
3. Characterization of Rx formulary (completed in-house or contracted)
4. Reusable vs. disposable non-hazardous Rx waste containers
5. Segregation model and complexity of segregation at the source (SAAs)
6. Service of Rx containers within the facility (self-op or contracted)
7. Initial and ongoing training (staff time)
8. Segregation compliance
9. Vendor contract inclusions and exclusions

***Note: always check the vendor's process of destruction of all (hazardous and non-hazardous ) Rx wastes and compliance with the State regulations***

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# Rx program costs (cont.)

## Approximate *first year* costs:

**Very small hospital, OP Surgery Center or Clinic:**

$1,000- $3,600 per year (*includes implementation, containers, training and both hazardous and non-hazardous Rx waste container disposal; this **does not include** a service tech or Rx formulary characterization)*

**Small hospital (60- 90 beds)**:

$15,600-$34,600 per year

**Medium size hospital (100 – 240 beds):**

$20,500 - $35,600 per year

**Large hospital (250 – 300 beds):**

$54,000 - $60,700 per year

**Very large hospital/Medical center (500-700 beds):**

$74,000 - $92,600 per year

(*The above calculations include program implementation, containers, training, service tech, both hazardous and non- hazardous Rx waste container disposal and Rx formulary characterization*)

**Note: subsequent year costs will be less if a reusable container system is used and segregation compliance remains good.**

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# Conclusion

- Appoint one position to be in charge of the hazardous and Rx waste, if possible
- Establish buy-in from administration and staff from get-go
- Be patient, encouraging, but firm; these programs are *not optional*
- Audit weekly and give constructive but honest feedback in regular intervals, to sustain gains and focus
- Make sure to train new employees and re-train all staff annually
- Have a sense of humor

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